

NuSTEC

- web page: <http://nustec.fnal.gov/>
- **Goal:** achieve a better understanding of neutrino interactions with nucleons and nuclei
 - **Event generator** improvement
 - Improve funding and opportunities for neutrino-oriented **nuclear theorists**



NuSTEC: Neutrino Scattering Theory Experiment Collaboration

2018 October 11-13
Gran Sasso Science Institute, Italy

vs&DIS workshop
Neutrino-Nucleus Scattering in the Shallow and Deep-Inelastic Kinematic Regimes

nustec.fnal.gov/nuSDIS18

NuInt 18
12th International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region

2018 October 15-19
Gran Sasso Science Institute, Italy

<https://indico.cern.ch/event/703880/>

NuInt 2018

NuInt 18 is the 12th of a series of workshops devoted to the discussion of neutrino-nucleus interactions, in the broad kinematical regime relevant to astrophysical applications and accelerator-based searches of neutrino oscillations.

News

April 11 - Registrations are opened

What is NuSTEC?

NuSTEC is a collaboration of theorists and experimentalists promoting and coordinating efforts between:

- Theorists – studying neutrino nucleus/nucleus interactions and related problems
- Experimentalists – primarily those actively engaged in neutrino nucleus scattering experiments as well as those trying to understand scintillation experiment systematics. Electron scattering experimentalists are certainly welcome
- Generator holders – actively developing/modifying the model of the nucleus as well as the behavior of particles input of the nucleus within generators.

The main goal is to improve our understanding of neutrino interactions with nucleons and nuclei and, practically, get that understanding in our event generators.

- Along the way we want to expand support for theorists and encourage a growing theoretical community

NuSTEC board

Theorists

- Leik Alvarez-Ruso (co-spokesperson, IFIC, Valencia, Spain)
- Mohammad Sajid Afsar (Aligarh Muslim University, Aligarh, India)
- Maria Barbara (University of Turin, Turin, Italy)
- Omar Benhar (Sapienza University of Rome, Rome, Italy)
- Richard Hill (University of Kentucky and Fermilab, USA)
- Patrick Huber (Center for neutrino physics, Virginia Tech, Blacksburg, VA, USA)
- Ratsire Jacobson (Ghent University, Ghent, Belgium)
- Animesh Kumbhkar (Fermilab, IL, USA)
- Marco Martini (RFU Saclay, Saclay, France)
- Taro Sato (Osaka University, Osaka, Japan)
- Thomas Schaeffler (Old Dominion University and Jefferson Lab, Norfolk, VA, USA)
- Jan Sobczak (nuWro representative, University of Wrocław, Wrocław, Poland)

Experimentalists

- Sara Biogressi (CEA-IRFU, Saclay, France)
- Steve Brice (Fermilab, IL, USA)
- Raquel Castillo Fernandez (Fermilab, IL, USA)
- Dan Chiriac (Colorado State University Fort Collins, CO, USA)
- Steve Dytman (University of Pittsburgh, Pittsburgh, PA, USA)
- Andy Farmer (University of Manchester, UK)
- Naohisa Hayakawa (JNET representative, KEK, Tsukuba, Japan)
- Tapani Katori (Queen Mary University of London, UK)
- Daniel Mann (Michigan State University, East Lansing, MI, USA)
- Candice Manion (Center for neutrino physics, Virginia Tech, Blacksburg, VA, USA)
- Jorge G. Morfin (co-spokesperson, Fermilab, IL, USA)
- Onofre Palamara (Fermilab, IL, USA)
- Jon Paley (Fermilab, IL, USA)
- Roberto Petti (University of South Carolina, Columbia, SC, USA)
- Gabe Perdue (GEM representative, Fermilab, IL, USA)
- Federico Sanchez (FAE, Autonomous University of Barcelona, Barcelona, Spain)
- Sam Zeller (Fermilab, IL, USA)

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NuSTEC school

NuSTEC files

Next conference series

Workshops, conferences, schools

Database

NuSTEC News



NuSTEC White Paper: Status and challenges of neutrino-nucleus scattering



Slide show from past NuSTEC schools



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NuSTEC

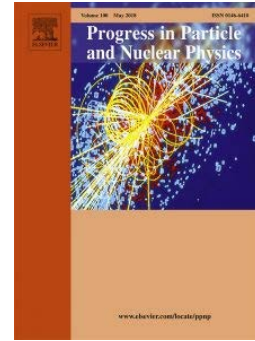
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- **Goal:** achieve a better understanding of **neutrino interactions with nucleons and nuclei**; **event generator** improvement; improve funding and opportunities for neutrino-oriented **nuclear theorists**
- NuSTEC Board: 17 experimentalists including representatives of:
 - DUNE, MicroBooNE/SBN, MINERvA, NOvA, T2K/HK, GENIE and NEUT
 - Sara Bolognesi (CEA-IRFU, Saclay, France)
 - Steve Brice (Fermilab, IL, USA)
 - Raquel Castillo Fernández (Fermilab, IL, USA)
 - Dan Cherdack (Colorado State University, Fort Collins, CO, USA)
 - Steve Dytman (University of Pittsburgh, Pittsburgh, PA, USA)
 - Andy Furmanski (University of Manchester, UK)
 - Yoshinari Hayato (NEUT representative, ICRR, Univ. Tokyo, Japan)
 - Teppei Katori (Queen Mary University of London, UK)
 - Kendall Mahn (Michigan State University, East Lansing, MI, USA)
 - Camillo Mariani (Center for neutrino physics, Virginia Tech, Blacksburg, VA, USA)
 - **Jorge G. Morfin (co-spokesperson, Fermilab, IL, USA)**
 - Ornella Palamara (Fermilab, IL, USA)
 - Jon Paley (Fermilab, IL, USA)
 - Roberto Petti (University of South Carolina, Columbia, SC, USA)
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- NuSTEC Board: 12 theorists, including NuWro representative
 - **Luis Alvarez Ruso** (co-spokesperson, IFIC, Valencia, Spain)
 - **Mohammad Sajjad Athar** (Aligarh Muslim University, Aligarh, India)
 - **Maria Barbaro** (University of Turin, Turin, Italy)
 - **Omar Benhar** (Sapienza University of Rome, Rome, Italy)
 - **Richard Hill** (University of Kentucky and Fermilab, USA)
 - **Patrick Huber** (Center for neutrino physics, Virginia Tech, Blacksburg, VA, USA)
 - **Natalie Jachowicz** (Ghent University, Ghent, Belgium)
 - **Andreas Kronfeld** (Fermilab, IL, USA)
 - **Marco Martini** (IRFU Saclay, Saclay, France)
 - **Toru Sato** (Osaka, University, Osaka, Japan)
 - **Rocco Schiavilla** (Old Dominion University and Jefferson Lab, Norfolk, VA, USA)
 - **Jan Sobczyk** (nuWro representative, University of Wroclaw, Wroclaw, Poland)

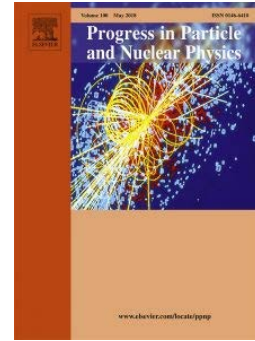
NuSTEC activities

- NuSTEC News
- NuSTEC White Paper: Status and challenges of neutrino–nucleus scattering (2017, 2018), *Prog. Part. Nucl. Phys.* 100 (2018) 1-68
 - 44 citations in SPIRES
 - US funding agencies: (+) read, (-) no priorities
- Schools:
 - NuSTEC Training in Neutrino Scattering Physics, Fermilab (2014, 2017)
 - NuSTEC Neutrino Generator School, Liverpool (2014)
 - NuSTEC School, Okayama (2015)
- Workshops:
 - IPPP-NuSTEC topical meeting on “neutrino-nucleus scattering”, Durham (2017)
 - INT Workshop on Elementary amplitudes, Seattle (2018)
 - Focussed SIS-DIS Workshop, L’Aquila (2018)
- Board meetings: 2015, 2017 (2), 2018



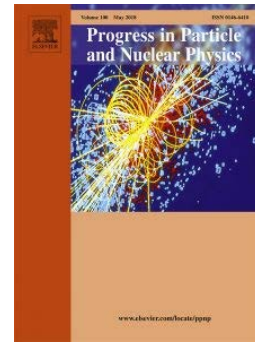
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- + several other “NuSTEC-related” activities and projects



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2018

- Oct. 11-13 2018, nuS&DIS Workshop, Gran Sasso Science Institute (GSSI), L'Aquila, Italy
- Aug. 12-18 2018, NuFact18, Virginia Tech
- July 9-13 2018, “Modelling neutrino-nucleus interactions”, The European Centre for Theoretical Studies in Nuclear Physics (ECT*), Trento, Italy
- June 12-July 13, INT Workshop-18-2a, “Fundamental Physics with Electroweak Probes of Light Nuclei”, Univ. Washington, Seattle, USA
- April 23-27 2018, “Exploring the role of electro-weak currents in Atomic Nuclei”, The European Centre for Theoretical Studies in Nuclear Physics (ECT*), Trento, Italy
- March 12-14 2018, “Neutrino cross section measurement strategy workshop”, Fermilab, USA
- Feb. 26-Mar. 30 2018, INT Workshop-18-1a “Nuclear ab initio Theories and Neutrino Physics”, Univ. Washington, Seattle, USA

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NuSTEC activities

- Proposed activities (2019-):
 - Focussed Workshop on resonances
 - NuSTEC School @ CERN (2019 or 2020)
 - Establish priorities
 - Increase smaller-group activities among NuSTEC collaborators...

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Your input is needed! What do you suggest?